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IFN $\beta$  G162C-Ig direct fusion construct open reading frame

1 ATGCTGGGAAGATGTCGTGATCCTTGGAGCCTCAATAATACTTTGGATAATGTTTGCA 60  
M P G K M V I L G A S N I L W I M F A

61 GCTTCTCAAGCCATGAGCTACAACTTGCTTGGATTCCTACAAAGACGACGAATTTTCAG 120  
A S Q A M S Y N L L G F L Q R S S N F Q

121 TGTGAGAAGCTCCTGTGGCAATTGAATGGGAGGCTTGAATACTGCCCTCAAGGACAGGATG 180  
C Q K L L W Q L N G R L E Y C L K D R M

181 AACTTTGACATCCCTGAGGAGATTAAAGCAGCTGCAGCAGTTCCAGAAAGGAGGACGCCGCA 240  
N F D I P E E I K Q L Q Q F Q K E D A A

241 TTGACCATCTATGAGATGCTCCAGAACATCTTTGCTATTTTTCAGACAAGATTCTATCTAGC 300  
L T I Y E M L Q N I F A I F R Q D S S S

301 ACTGGCTGGAATGAGACTATTGTTGAGAACCTCCTGGCTAATGTCATCATCAGATAAAC 360  
T G W N E T I V E N L L A N V Y H Q I N

361 CATCTGAAGACAGTCCCTGGAAGAAAACCTGGAGAAAAGATTTCACCAGGGGAAACTC 420  
H L K T V L E E K L E K E D F T R G K L

421 ATGAGCAGTCTGCACCTGAAAAGATATTATGGGAGGATTCTGCATTACCTGAAGGCCAAG 480  
M S S L H L K R Y Y G R I L H Y L K A K

FIG. 1 A

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481 GAGTACAGTCACTGTGCTGGACCAATAGTCAGAGTGGAATCCCTAAGGAACHTTTACTTC 540  
E Y S H C A W T I V R V E I L R N F Y F

541 ATTAACAGACTTACATGTTACCTCCGAAACGTCGACAAACTCACACATGCCCCACCGTGC 600  
I N R L T C Y L R N V D K T H T C P P C

601 CCAGCACCTGAACCTCTGGGGGACCGTCAGTCTTCTCTCCCCCAAAACCCAGGAC 660  
P A P E L L G G P S V F L F P P K P K D

661 ACCCTCATGATCTCCCGGACCCCTGAGGTCACATGCGTGGTGGACGTAGCCACGAA 720  
T L M I S R T P E V T C V V V D V S H E

721 GACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACA 780  
D P E V K F N W Y V D G V E V H N A K T

781 AAGCCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAAGCGTCCCTCACCGTCCCTG 840  
K P R E E Q Y N S T Y R V V S V L T V L

841 CACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAAACAAGCCCTCCCA 900  
H Q D W L N G K E Y K C K V S N K A L P

901 GCCCCCATCGAGAAACCATCTCCAAAGCCAAAGGCGAGCCCCGAGAACCCACAGGTGTAC 960  
A P I E K T I S K A K G Q P R E P Q V Y

FIG. 1 B

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961 ACCCTGCCCCCATCCCGGATGAGCTGACCAAGAACCAGGTACGCTGACCTGCGTGGTC 1020  
T L P P S R D E L T K N Q V S L T C L V

1021 AAAGGCTTCTATCCAGCGACATCGCGTGGAGTGGGAGAGCAATGGGCAGCCGGAGAAC 1080  
K G F Y P S D I A V E W E S N G Q P E N

1081 AACTACAAGACCAAGCCCTCCCGTGTGGACTCCGACGGCTCCTTCTTCTCTACAGCAAG 1140  
N Y K T T P P V L D S D G S F F L Y S K

1141 CTCACCGTGGACAAGAGCAGGTGGCAGCAGGGAAACGTCCTTCTCATGCTCCGTGATGCAT 1200  
L T V D K S R W Q Q G N V F S C S V M H

1201 GAGGCTCTGCACAACCACTACACGCAGAGCCCTCTCCCTGTCTCCCGGAAATGA 1257  
E A L H N H Y T Q K S L S L S P G K \*

FIG. 1 C

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IFN $\beta$  G162C-Ig fusion G4S linker construct open reading frame

1 ATCCCTGGGAAGATGGTCGTGATCCTTGGAGCCTCAAATATACATTGGATAATGTTTCCA 60  
M P G K M V V I L G A S N I L W I M F A

61 GCTTCTCAAGCCATGAGCTACAACCTTGCTTGGATTCCCTACAAAGACAGCAATTTTCAG 120  
A S Q A M S Y N L L G F L Q R S S N F Q

121 TGTCAAGAGCTCCTGTGGCAATTGAATGGGAGGCTTGAATACTGCCTCAAGGACAGGATG 180  
C Q K L L W Q L N G R L E Y C L K D R M

181 AACTTTGACATCCCTGAGGAGATTAAGCAGCTGCAGCAGTCCAGAAGGAGGACGCCGCA 240  
N F D I P E E I K Q L Q Q F Q K E D A A

241 TTGACCATCTATGAGATGCTCCAGAACATCTTTGCTATTTTCAGACAAGATTCTCTAGC 300  
L T I Y E M L Q N I F A I F R Q D S S S

301 ACTGGCTGGAATGAGACTATTGTTGAGAACCTCCTGGCTAATGCTCTATCATCAGATAAAC 360  
T G W N E T I V E N L L A N V Y H Q I N

361 CATCTGAAGACAGTCTCTGGAGAAAACCTGGAGAAAGAGATTTCACCGGGGAAACTC 420  
H L K T V L E E K L E K E D F T R G K L

FIG. 2A

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421 ATGAGCAGTCTGCACCTGAAAAGATATTATGGGAGGATTCTGCATTACCTGAAGGCCAAG 480  
M S S L H L K R Y Y G R I L H Y L K A K

481 GAGTACAGTCACCTGCGCTGGACCATAGTCAGAGTGGAAATCCTAAGGAACCTTTACTTC 540  
E Y S H C A W T I V R V E I L R N F Y F

541 ATTAACAGACTTACATGTACCTCCGAAACGGCGGTGGTGGCAGCGTCGACAAAACTCAC 600  
I N R L T C Y L R N G G G S V D K T H

601 ACATGCCCCACCGTGCCAGCACCTGAACCTCCTGGGGGACCGTCAGTCTTCTTCCCC 660  
T C P P C P A P E L L G G P S V F L F P

661 CCAAAACCCCAAGGACACCCCTCATGATCTCCCGGACCCCTGAGGTACATGCGTGGTGGTG 720  
P K P K D T L M I S R T P E V T C V V V

721 GACGTGAGCCACGAAGACCCTGAGGTCAAGTCAACTGGTACGTGGACGGCGTGGAGGTG 780  
D V S H E D P E V K F N W Y V D G V E V

781 CATAATGCCAAGACAAAGCCCGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGC 840  
H N A K T K P R E E Q Y N S T Y R V V S

841 GTCCTCACCGTCTCCTGCACCAGGACTGGCTGAATGCAAGGAGTACAAGTCCAAGGTCTCC 900  
V L T V L H Q D W L N G K E Y K C K V S

901 AACAAAGCCCTCCAGCCCCCATCGAGAAACCATCTCCAAAGCCAAAGGCAGCCCCGA 960  
N K A L P A P I E K T I S K A K G Q P R

FIG. 2B

961 GAACACAGGTGTACACCCCTGCCCCCATCCCGGATGAGCTGACCAAGAACAGGTCAGC 1020  
E P Q V Y T L P P S R D E L T K N Q V S

1021 CTGACCTGCCCTGGTCAAAGGCTTCTATCCACGACATCGCCGTGGAGTGGGAGAGCAAT 1080  
L T C L V K G F Y P S D I A V E W E S N

1081 GGGCAGCCGGAGAACTACAAGACCGCTCCCGTGTGGACTCCGACGGCTCCTTC 1140  
G Q P E N Y K T T P P V L D S D G S F

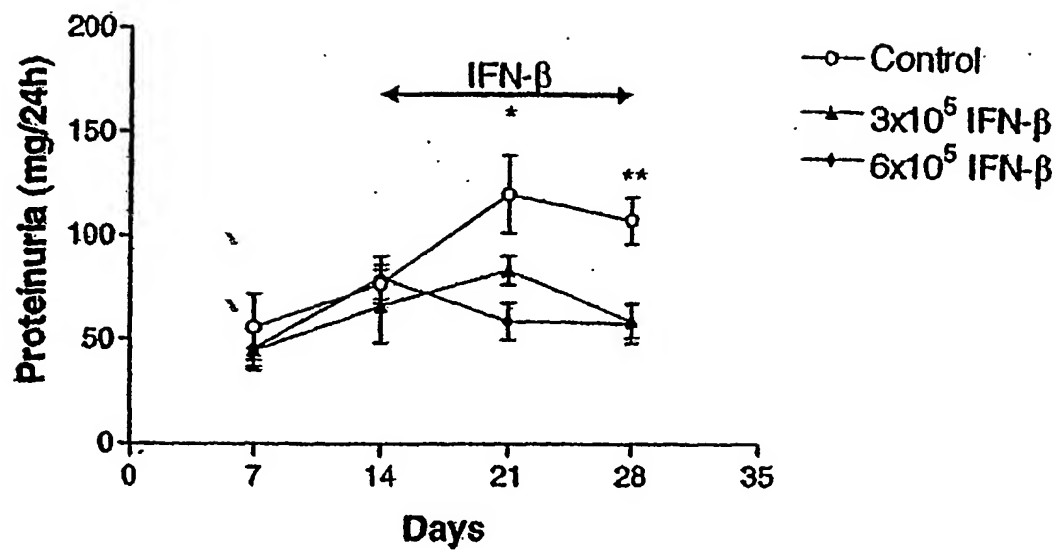
1141 TTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGCTTCTCTCA 1200  
F L Y S K L T V D K S R W Q Q G N V F S

1201 TGCTCCGTGATGCATGAGGCTCTGCACAACCACCTACACGCAGAAAGAGCCCTCTCCCTGTCT 1260  
C S V M H E A L H N H Y T Q K S L S L S

1261 CCCGGGAATGA 1272  
P G K \*

FIG. 2 C

FIG. 3



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FIG. 4

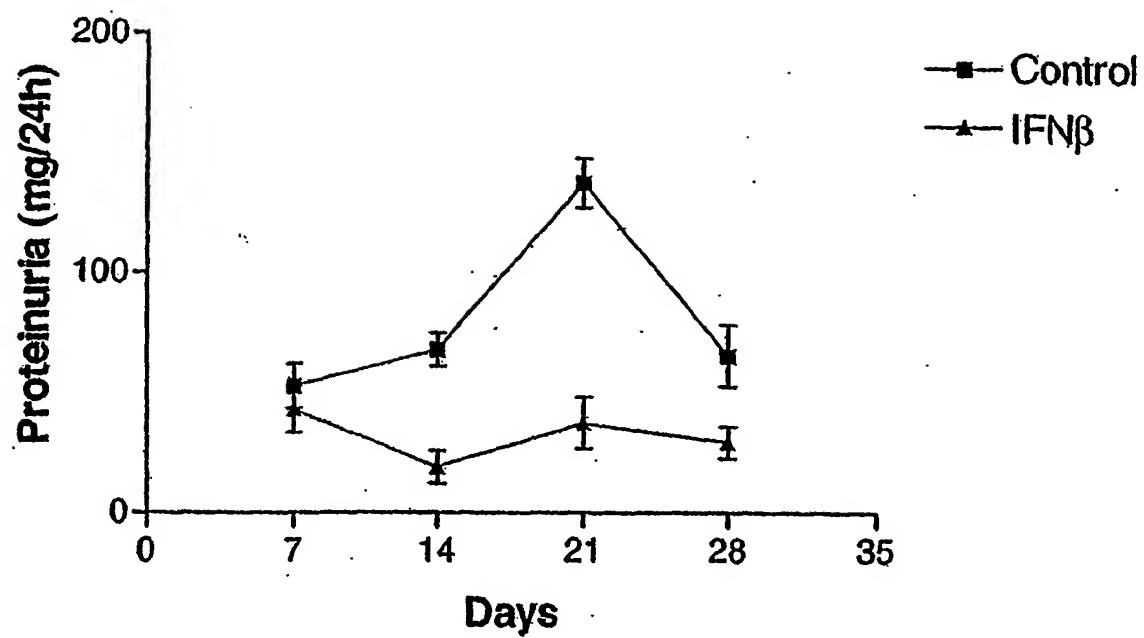






FIG. 6

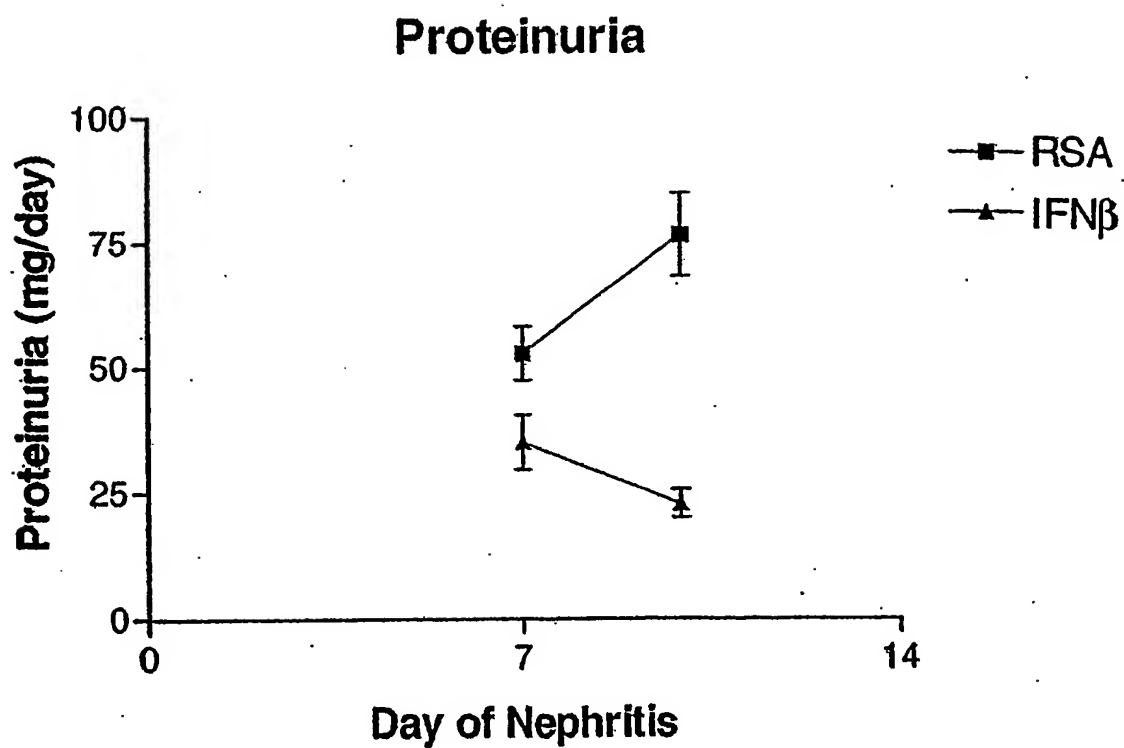
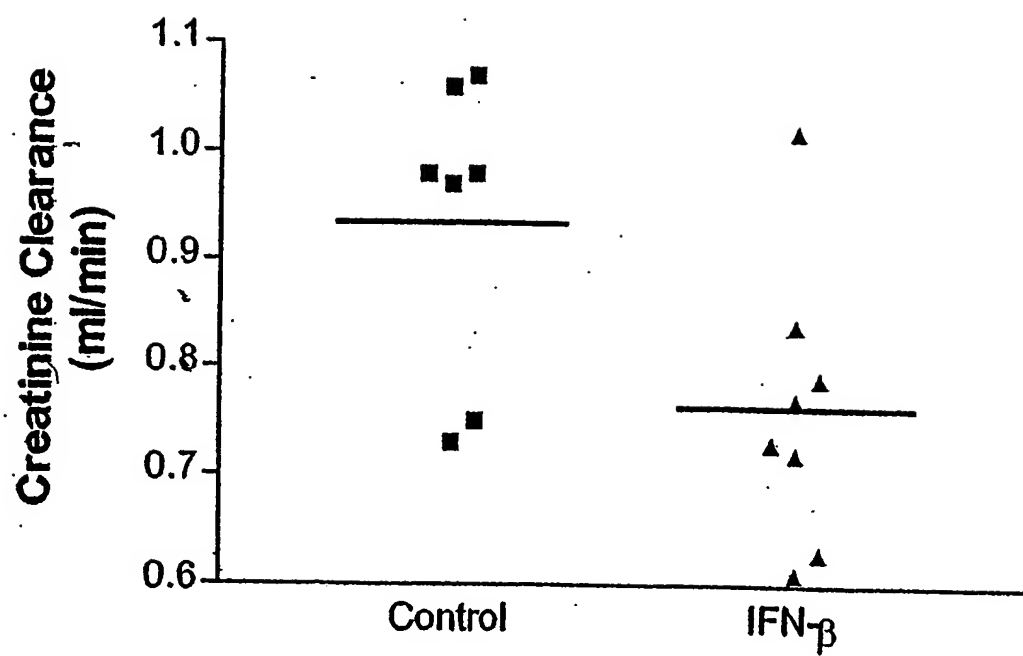
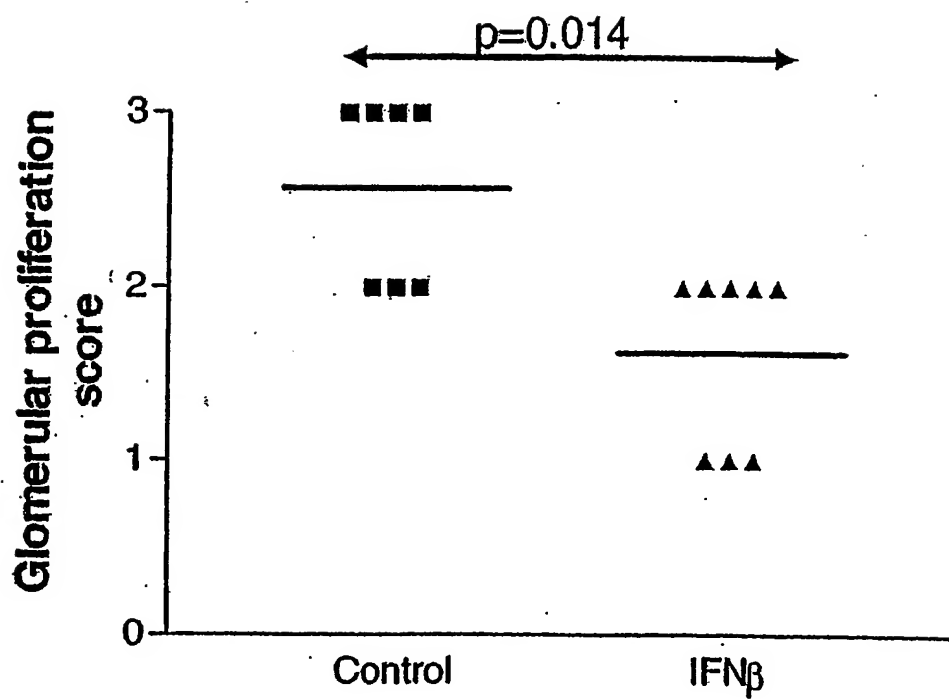


FIG. 7



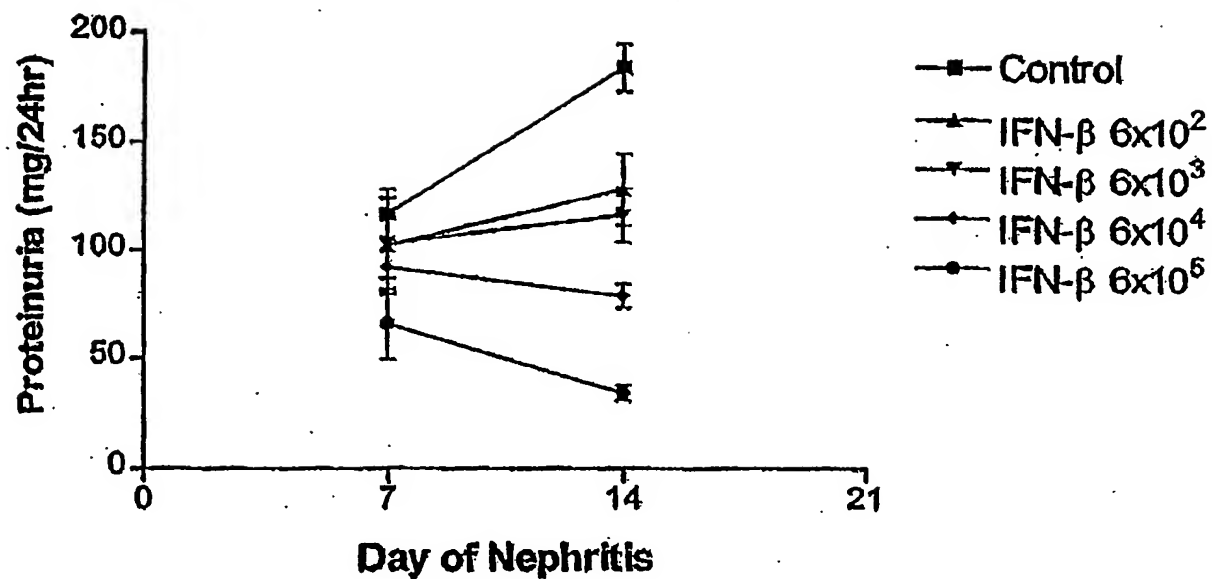
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FIG. 8



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FIG. 9



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